1	ATTACHMENT 11
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4	Area 1 Interim Action
5	Section 1.
6	1. The AMB Property Corporation is redeveloping the Area 1 Property where remediation
7	activities and compliance monitoring have been taking place as part of an interim action for SWMU S-
8	12b and AOC 08. The redevelopment of the Area 1 Property will interrupt interim action activities when
9	demolition of Building 17-05 and earthwork to prepare the new building foundation necessitate the
10	abandonment of the groundwater monitoring wells being used to track the effectiveness of the interim
11	action. To insure the continuation of the interim action, the PLPs shall follow the modified interim action
12	work plan: Supplement to the Final Interim Remedial Action Work Plan, Boeing Auburn (Landau
13	Associates, October 11, 2005), which is hereby incorporated into this Agreed Order. See Attachments 9
14	and 10.
15	2. The PLPs shall develop a soil management work plan at least two months prior to the
16	beginning of sub-grade construction activities on the Area 1 Property. The soil management plan will
17	describe how the requirements of WAC 173-303 will be met as soil and construction debris that are
18	potentially contaminated with Dangerous Waste or Dangerous Waste Constituents are generated or
19	removed from the Area 1 Property. This includes the management of any wastewater generated as a result
20	of dewatering activities at the Area 1 Property. This soil management work plan will be shared with all
21	contractors and subcontractors working on the Area 1 Property. Section VI.(16) shall be followed by the
22	PLPs if new discoveries of contaminated media are made during construction activities at the Area 1
23	Property.
24	3. The PLPs will evaluate the analytical results from nine wells selected from the
25	groundwater monitoring system for the potential of vapor intrusion into the new building being

constructed on the Area 1 Property by the AMB Property Corporation. The groundwater monitoring
results of each sampling event for the nine wells constituting the data set to be used for consideration of
potential impacts to indoor air will be used to estimate an upper bounds estimate of the mean
concentration (i.e., the upper 95 percent confidence limit on the mean [UCL95]) of trichloroethene (TCE)
and vinyl chloride (VC) at a given point in time, specifically, the date of the groundwater monitoring
event. The data set used to calculate the UCL95 will consist of monitoring wells: AGW002, AGW053,
AGW058, AGW066, AGW067, AGW106, AGW110, AGW112, and a proposed new shallow well that
will be located north of the new building (between wells AGW066 and AGW067). If the UCL95 exceeds
the action levels set for TCE = 30 ug/l and VC = 99 ug/l , the PLP's will consider whether an individual
sample contributing to the UCL95 might be considered an outlier; in this case, indoor air sampling may
be deferred until a confirmation sample is collected in the following quarter. If the UCL95 exceeding the
action level is found not to be a result of an individual outlier, or if the outlier is confirmed by subsequent
sampling, the PLP's will conduct indoor air sampling to determine whether the observed groundwater
concentrations do contribute to indoor air concentrations exceeding MTCA Method C cleanup levels for
indoor air. For an explanation of how the action levels were derived, refer to Section 2 of this attachment
Within 30 days of lab reports indicating an exceedence of the action levels for groundwater, the
PLP's will submit an Indoor Air Sampling Plan to Ecology that proposes indoor air sampling locations,
locations for other media samples (such as ambient air or soil gas, e.g.) to be collected concurrently,
sample collection and analysis methodologies, analyte lists, and analyte reporting limit lists, standard
operating procedures, data quality assurance/quality control procedures, reporting format, and schedules.
The Indoor Air Sampling Plan will be implemented within 20 days of Ecology approval of the plan. If
sampling results indicate that vapor intrusion is causing an exceedence of MTCA Method C cleanup
levels for indoor air, the PLP's will take actions to reduce vapor intrusion impacts to acceptable levels.
Indoor air samples will then be taken again to confirm that the mitigation action was effective.

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Section 2.

- The groundwater action levels of TCE = 30 ug/l and VC = 99 ug/l were derived by use of the
- 3 EPA Johnson-Ettinger model spreadsheet (GW-ADV-Feb04.xls, Version 3.1, 02/04). These specific
- 4 levels correspond to indoor air predictions equal to the MTCA Method C indoor air cleanup levels for
- 5 TCE and VC when the air exchange rate, Q_{soil}, building dimension, soil type, and other values (indicated
- 6 below) are utilized as model inputs.
- 7 <u>Input to the Johnson-Ettinger Model (JEM)</u>
- Average vapor flow rate into bldg: Q_{soil} is set by the model
- 9 1 stratum: sand
- Bulk ρ, total porosity, and soil water-filled porosity are JEM defaults for sand.
- The following input parameters are modified from GeoEngineers Memorandum, October 5, 2005, using a
- building height of approximately 10 ft, to accommodate a flexible building design that is anticipated to
- generally have ceiling heights of 19 ft, or greater, with some lesser areas designated for office space with
- ceiling heights of approximately 10 ft:
- Average soil/groundwater Temperature: $T_S = 11$
- Depth below grade to bottom of enclosed space floor: $L_F = 15$ centimeters
- Depth below grade to water table: $L_{WT} = 579$ cm (or 19'). This assumes 15' from water table to
- grade and then 4' of fill above grade.
- Soil-building pressure differential: $\Delta P = 40$
- Floor length: $L_B = 118m (384')$
- Floor width: $W_B = 118 \text{ m} (384')$
- Footprint: = 750,000 ft2
- Space height: $H_B = 305 \text{ cm} (10^\circ)$
- Indoor air exchange rate: ER = 1/hr

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